

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

The statutory and regulatory requirements, and the Environmental Protection Agency's (EPA's) review of Arkansas' compliance with each requirement, are described in detail below.

Enclosure to letter from Miguel I. Flores, EPA Region 6 to Martin Maner, ADEQ

Date of Transmittal Letter From the State: September 5, 2002

Date of Receipt by the EPA: September 9, 2002

Date of "good cause" Letter to the State: December 17, 2002

Date of Response Letter From the State: January 16, 2003

Purpose

The purpose of this review document is to describe the rationale for the EPA's partial approval and partial disapproval of Arkansas' 2002 Section 303(d) list of water quality limited waters requiring TMDLs. The following sections identify those key elements to be included in the list submittal based on the Clean Water Act and the EPA regulations (see 40 CFR Section 130.7). The EPA reviewed the methodology used by the State in developing the 303(d) list and the State's description of the data and information it considered. The EPA's review of Arkansas' 303(d) list is based on the EPA's analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

Statutory and Regulatory Background

Identification of WQLSs for Inclusion on Section 303(d) List

Section 303(d)(1) of the Act directs States to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirements applies to waters impaired by point and/or nonpoint sources, pursuant to the EPA's long-standing interpretation of Section 303(d).

The EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by State or local authority, and (3) other pollution control requirements required by State, local, or federal authority. See 40 CFR 130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

In developing Section 303(d) lists, the States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to the EPA. See 40 CFR 130.7(b)(5). In addition to these minimum categories, the States are required to consider any other data and information that are existing and readily available. The EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and readily available. See Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991, Appendix C ("EPA's 1991 Guidance"). While the States are required to evaluate all existing and readily available water quality-related data and information, the States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring the States to assemble and evaluate all existing and readily available water quality-related data and information, the EPA regulations at 40 CFR 130.7(b)(6) require the States to include as part of their submissions to the EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region. The State described in an attachment to its submittal titled Compliance With Consent Decree how it used existing and readily available data in the preparation of the Arkansas 303(d) list for 2002.

Priority Ranking

The EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that the States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require the States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those water quality limited segments (WQLSs) targeted for TMDL development in the next two years. In prioritizing and targeting waters, the States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that the States establish priorities. The States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats; recreational, economic, and aesthetic importance of particular waters; degree of public interest and support; and the State or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and EPA's 1991 Guidance.

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Analysis of Arkansas' Submission

Consideration of Existing and Readily Available Water Quality-Related Data and Information.

The EPA has reviewed the State's submission, and has concluded that the State developed its Section 303(d) list in partial compliance with Section 303(d) of the Act and 40 CFR 130.7. Because the EPA has determined that Arkansas' submission does not include all waters that meet Section 303(d) listing requirements, the EPA is partially approving and partially disapproving Arkansas' list submission and proposing to add the additional waters and pollutants that meet the listing requirements to the final 2002 list. The EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed, including a careful review of the waters addressed in the May 16, 2000 Consent Decree (CD) in Sierra Club v. EPA, Case No. LR-C-99-114 (E.D. Ark.). Based on the EPA's review, 53 waterbody pollutant pairs are proposed for addition to the Arkansas 2002 303(d) list.

As suggested by recent EPA guidance, Arkansas chose to combine the 2002 Section 305(b) Report and Section 303(d) list into a single Integrated Water Quality Monitoring and Assessment Report. However, category five, the 2002 Section 303(d) list, was submitted separately on September 5, 2003. This is the portion of the Integrated Report on which the EPA is taking action today. The 2002 Integrated Water Quality Monitoring and Assessment Report followed on September 23, 2002. A single assessment methodology for the integrated report was used for both the 305(b) reporting and the 303(d) listing activities.

The EPA's review of Arkansas' waters consisted of applying the Arkansas Department of Environmental Quality's (ADEQ) methodology to data (STORET, USGS, or Arkansas' ambient monitoring data) for the period of record from October 1998 through December 2001 in addition to reviewing other readily available data.

Although the EPA reviewed Arkansas' listing methodology as part of our review of the listing submission, the EPA's partial approval of the State's listing decisions should not be construed as concurrence with or approval of the listing methodology. EPA is not required to take action on the listing methodology itself under 40 CFR 130.7. The EPA's decision to partially approve and partially disapprove Arkansas' listing decisions is based on the EPA's review of the data and information submitted concerning individual waters and the State's evaluations of those waters. While the EPA considered the State's listing methodology as part of its review, our evaluation was intended to determine whether the State had identified all waters that meet federal listing requirements specified in Section 303(d) and 40 CFR 130.7. Although the EPA has concerns about some aspects of the State's listing methodology, those concerns are not considered in our final listing decision unless application of the methodology resulted in impaired waters not being listed.

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

The listing methodology employed by Arkansas for 2002 describes a set of decision criteria that were flexibly applied. In general, waters were listed in cases where at least 12 samples were available and more than a certain percentage of samples exceeded the applicable water quality standards during the past three years. The applicable percent exceedances provided in the ecoregion and stream specific assessment criteria tables of the ADEQ's assessment methodology varied according to the parameter (i.e. turbidity, pathogens, etc.). The EPA technical staff determined that the percent exceedance used in the assessment methodology is a reasonable approach as described in the EPA 1997 Guidance document and is consistent with Arkansas's water quality standards.

Consistent with 130.7(b)(5) Arkansas considered all 305(b) reports and as directed in the CD, Arkansas and the EPA considered those reports prepared after January 1, 1996. Arkansas' response to the EPA regarding how these reports were used in its assessment is as follows:

“All 305(b) reports prepared after January 1, 1996, were considered; however, the 1996 report utilized data collected in 1994-95. This data exceeds the 5-year age limitation on data to be considered for the 2002 report and as recommended by EPA guidance for 305(b) reporting. The 1998, 305(b) report utilized data collected in 1996-97, which also exceeds the 5-year age limit for usable data. However, since this data produced the 1998, 303(d) listing which is in litigation, this data was utilized as the baseline. The 2000, 305(b) report reevaluated data from 1995-1998, and the assessment was very similar to the 2002 assessment. As discussed in its assessment methodology and other places, Arkansas did not consider the terminology of "partially meeting" as a valid category because of its ambiguity. Although the 1996, 305(b) report utilized this terminology because it was recommended in EPA's guidance, Arkansas felt it was clear that it did not intend for the "Partially Meeting" category to imply a not meeting assessment. Arkansas changed its terminology in subsequent reports to "Waters of Concern" which was clearly defined in the assessment methodology as not intended to imply impairment. Similarly the term "threatened" was not used in Arkansas 303(d) reports because of its potential for subjective interpretations.”

For purposes of reviewing the waters addressed in the CD, the EPA felt it was appropriate to use the 1994-95 data even though it exceeded the 5-year age limitation because there was no more recent data or other information available and it was the 1994-95 data that was used to make a nonsupport decision for the 1996 list.

Consistent with 130.7(b)(5) Arkansas considered all Section 319 lists prepared after January 1, 1996, including all nonpoint source pollution assessment reports, annual reports, and data and information collected for such reports. Arkansas' 1997 nonpoint source assessment report was based on the 1994-96 data and the 1996, 305(b) assessment. Arkansas pointed out

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

that the purposes of the 319 reports are different from the 303(d) listing in that the 319 report primarily prioritizes and directs funding for nonpoint source impact remediation. Therefore, many waters are listed which may not be impaired but are demonstrating nonpoint source impacts and would benefit from remediation activities. Arkansas gave the following reasons for not considering its 1997 Nonpoint Source report: 1) it utilized data older than the 5-year age limit; 2) more recent data have been collected since 1995-96; and 3) the objective of the 319 report limits its relevance in the 303(d) listing process.

Consistent with 130.7(b)(5) Arkansas considered the most recent EPA-approved Section 303(d) lists of states adjacent to Arkansas to the extent such lists relate to waterbodies that flow through both Arkansas and the relevant adjacent State. Arkansas reviewed said lists and reported no additional justification was found to provide a listing contrary to Arkansas' proposed listing for 2002 even though comments were submitted by both Oklahoma and Missouri highlighting issues of transboundary waters. No issues were identified for waters flowing from Arkansas into Louisiana. The EPA reviewed 303(d) lists from Oklahoma and Missouri as part of its review process. Results of the review are discussed in detail under the subtitle "Basis for Decision to Add Waters to Arkansas' 2002 Section 303(d) list".

Consistent with 130.7(b)(5) Arkansas considered all data collected by and reports prepared by the ADEQ (including all synoptic monitoring data, special reports, surveys and assessments). The EPA in its review, considered all such reports prepared between 1994-2002.

Consistent with 130.7(b)(5) Arkansas utilized in its assessment process all STORET data from Arkansas which meets the data criteria.

Consistent with 130.7(b)(5) Arkansas reviewed NPDES Quarterly noncompliance reports submitted by the ADEQ to the EPA, Region VI as required by 40 C.F.R. Section 123.45. Arkansas found these reports to be unrelated to water quality impairments. Most significant noncompliance of final effluent limits (SNFEL) did not regularly occur from the same facility and therefore was not likely to result in long-term impacts or waterbody impairments. The EPA's regulations require waters to be listed if technology based and other required controls are not sufficient to implement applicable water quality standards. In these cases, permit limits are sufficient to implement such standards, but Arkansas' Permit Enforcement Reports indicate non-compliance with such limits. Any exceedances of applicable standards are due to such noncompliance, not to inadequate limits, and therefore the EPA determined the affected waters are not required to be listed. The incidences in these reports are typically resolved through the Enforcement Division, a mechanism in place to deal with NPDES permit violations.

Consistent with 130.7(b)(5) Arkansas considered Beach closures required by the Arkansas Department of Health (ADH). Arkansas reported Beach closures by the ADH did not occur regularly over extended periods and did not result in waterbody impairment. As part of its

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

review process, the EPA requested Beach closure data during the last three years for surface waters from each of the five regional offices in Arkansas. In their responses; three offices reported no beach closures, one office reported two Beach closures and another office reported one Beach closure. The EPA reviewed the information and concluded that these occurrences were of low frequency, temporary in nature, and did not warrant the listing of any waterbodies.

Consistent with 130.7(b)(5) Arkansas considered fish consumption advisories and bans issued by the ADH. Arkansas reported that fish consumption bans are the primary parameter used to assess the "fish consumption" use of all waters. The EPA is disapproving Arkansas' failure to list certain waters based on fish consumption advisories. This is discussed in detail under the subtitle "Basis for Decision to Add Waters to Arkansas' 2002 Section 303(d) List".

Consistent with 130.7(b)(5) Arkansas considered water for which water quality problems have been reported by local, state or federal agencies, members of the public, or academic institutions. Arkansas reported it investigated formal reports on water quality problems by local state or federal agencies and members of the public for permanent impairments to waterbodies. The EPA further investigated those waters reported during the public comment period for Arkansas' 2002 303(d) list.

Consistent with 130.7(b)(5) Arkansas utilized the 1998 Section 303(d) list in making the 2002 assessment and reported only minor differences occur between the two assessments. Based on its review of the 2002 Section 303(d) list in light of the 1998 Section 303(d) list, EPA is disapproving Arkansas' failure to list certain waters. This is discussed in detail under the subtitle "Basis for Decision to Add Waters to Arkansas' 2002 Section 303(d) list".

The EPA has determined that Arkansas took reasonable steps to solicit all existing and readily available water quality-related data and information from members of the public and government agencies identified in paragraph 10 of the CD. Letters were sent to the governmental agencies specifically listed in the CD followed by a minimum of one follow-up letter to any of the governmental agencies that failed to respond to the initial request. Letters were sent to the Natural Resource Conservation Service rather than the U.S. Department of Agriculture and to the Ozark-St. Francis National Forest and Ouachita National Forest rather than the U.S. Forest Service. No response was received from those letters.

The EPA has reviewed Arkansas' description of the data and information it considered, its methodology for identifying waters, and the State's responsiveness summary dated January 16, 2003. The EPA concludes that the State properly assembled all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR 130.7(b)(5). The EPA concludes that the State's decisions to list the waters identified in its listing submittal are consistent with federal listing requirements. However, the EPA concludes that the State's decision not to list several waters and pollutants is inconsistent

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

with federal listing requirements. As discussed in detail below, the available data and information are sufficient to support a conclusion that these waters are water quality limited and need to be listed pursuant to Section 303(d). Therefore, EPA is proposing to add these waters to Arkansas' list, and will be seeking public comment on these proposed additions.

Basis for Decision to Add Waters to Arkansas' 2002 Section 303(d) List

Based on the EPA's initial review of the final list submission, the EPA identified several waters which appeared to exceed currently applicable water quality standards, and in a letter dated December 17, 2002, requested that the state provide a "good cause" justification for its decision not to list these waters. The State responded in a letter dated January 16, 2003. The concerns identified by the EPA, the State's response, and the EPA's decisions are discussed below.

Use Designations for Delta Ecoregion Streams

Concerns with application of Arkansas' water quality standards arose when assessing waters for violation of the turbidity criteria in the Delta ecoregion. The water quality standards list two use designations for waters in the Delta Ecoregion, one for least-altered Delta streams and the other for channel-altered Delta streams. The channel-altered designation carries with it a less stringent criterion for temperature and turbidity. The water quality standards do not specifically identify those waters in the Delta considered to be channel-altered leading to questions on the appropriate use and associated criterion to apply in assessing these waters. The State maintains that most of the waters in the Delta Ecoregion are channel-altered and therefore they have applied this criterion to many of the streams they evaluated for the 2002 list. The EPA has determined that in the absence of specific designations it is appropriate to presume the higher use and the more stringent criterion associated with that use for determination of support for streams in the Delta Ecoregion. This interpretation of the State's water quality standards results in twenty-two additional waters being added to the State's 2002 303(d) list. The EPA is proposing to place these waters in a separate subcategory 5(b) of the impaired waters list. If the State, through appropriate mechanisms, establishes that these streams should be designated as channel-altered streams these waters will be reassessed using the appropriate criterion and determinations of their impairment status will be reviewed.

STREAM NAME	HUC	REACH	POLLUTANT	PRIORITY
Wabbaseka Bayou	8020401	003	siltation	L
Bayou DeView	8020302	004	siltation	L
Bayou DeView	8020302	005	siltation	L
Bayou DeView	8020302	006	siltation	L
Bayou DeView	8020302	007	siltation	L

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Cache River	8020302	016	siltation	L
Cache River	8020302	017	siltation	L
Cache River	8020302	018	siltation	L
Cache River	8020302	019	siltation	L
Cache River	8020302	020	siltation	L
Cache River	8020302	027	siltation	L
Cache River	8020302	028	siltation	L
Cache River	8020302	029	siltation	L
Cache River	8020302	031	siltation	L
Cache River	8020302	032	siltation	L
Village Creek	11010013	006	siltation	L
Village Creek	11010013	007	siltation	L
Village Creek	11010013	008	siltation	L
Village Creek	11010013	012	siltation	L
Blackfish Bayou	8020203	003	siltation	L
Blackfish Bayou	8020203	005	siltation	L
Blackfish Bayou	8020203	007	siltation	L

Data are sufficient to support a conclusion that fishable/swimable goals are violated due to fish advisories for mercury.

As discussed in the EPA document, "*Guidance: Use of Fish and Shellfish Advisories and Classifications in 303(d) and 305(b) listing Decisions*" issued October 24, 2000, section 101(a)(2) of the CWA establishes as a national goal "water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, wherever attainable." These are commonly referred to as the "fishable/swimable" goals of the Act. The EPA interprets "fishable" uses under section 101(a) of the CWA to include designated uses providing for the protection of aquatic communities and human health related to consumption of fish and shellfish. In other words, the EPA views "fishable" to mean that not only can fish and shellfish thrive in a waterbody, but when caught, can also be safely eaten by humans. The EPA guidance provides that:

For purposes of determining whether a waterbody is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP [National Shellfish Sanitation Program] classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

1. the advisory is based on fish and shellfish tissue data,

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

2. a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard)
3. the data are collected from the specific waterbody in question and
4. the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the State, Territory, or authorized Tribal water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant.

In their "good cause" response, Arkansas cited their assessment methodology that establishes that waters with fish advisories would be listed as "nonsupport" for fish consumption if a primary segment of the fish community (e.g., all predators or all Largemouth bass) is recommended for nonconsumption by any user group (e.g., general population or high risk groups). However, if a consumption restriction is recommended, e.g., no more than two meals per month or no consumption of fish over 15-inches, these waters will not be listed as "nonsupport". Arkansas responded that most of the waters listed in the EPA's table (below) do not meet the State's assessment criteria above for listing as impaired since they do not have a prohibition against eating any species of fish as a result of mercury contamination. EPA disagrees that this is a reasonable basis for concluding these waters are not impaired.

EPA identified the following waters as impaired for mercury based on fish tissue advisories for mercury in fish tissue, through application of EPA's guidance described above.

STREAM NAME	HUC	POLLUTANT	PRIORITY
Cove Creek	11110202	mercury/fish tissue	H
Monticello	8040204	mercury/fish tissue	H
Nimrod	11110206	mercury/fish tissue	H
Ouachita River Oxbows below Camden	8040202	mercury/fish tissue	H
Sylvia	8040203	mercury/fish tissue	H
Winona	8040203	mercury/fish tissue	H

Data are sufficient to support a conclusion that the narrative water quality standard for nutrients is violated.

The States of Missouri and Oklahoma commented on the issue of nutrient listings for transboundary waters during the State's public review period. The EPA has reviewed these comments offering concerns with nutrient loads, specifically phosphorus loadings to specific streams and Arkansas' responses to these comments. The State of Missouri has established a

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

TMDL for total phosphorus to address water quality concerns in Table Rock Lake, Missouri. The EPA has reviewed these comments and phosphorus measurements in streams in Arkansas that flow into Table Rock Lake. The EPA has determined that total phosphorus loads in Arkansas from Osage Creek below the Town of Berryville, flowing into the Kings River and thence to Table Rock Lake, are significantly higher than other streams in this watershed. Furthermore, the total phosphorus concentration in reach 37 of the Kings River in Arkansas, beginning where Osage Creek enters the Kings River, is twelve times higher than the average Ozark Highlands ecoregion reference stream value.

The State of Missouri also indicated that it will be developing a TMDL for nutrients on the Elk River Basin in Missouri that includes the headwaters of Little Sugar Creek in Arkansas. The EPA has determined that Town Branch, a tributary to Little Sugar Creek, and suspected of contributing high phosphorous loads is listed on Arkansas' 2002 303(d) list for nutrients.

The Illinois River was listed on the Oklahoma 303(d) list. The Oklahoma Scenic Rivers Commission and Shipley, Jennings & Champlin on behalf of Save the Illinois River (STIR) commented on the absence of the Illinois River from the Arkansas list of impaired waters. The Illinois River was included in the CD. The EPA has reviewed this comment and phosphorus measurements in the Illinois River. Two site-specific studies conducted by the Arkansas Water Resource Center (Nelson and Soerens, 2002; Nelson et. al., 2002) show annual increasing total phosphorus loads to the Illinois River at Arkansas Highway 59 Bridge over a five-year period from 1997 through 2001. In addition, the EPA has determined that total phosphorus concentrations in the Illinois River show an increasing trend from the state line to its junction with Osage Creek and onwards upstream on Osage Creek and Spring Creek. Total phosphorus concentrations in Osage Creek are nine times higher than the average Ozark Highlands ecoregion reference stream value.

EPA has determined that the total phosphorus concentrations in Bayou Two Prairie are higher than the average Delta ecoregion reference values. As a result, EPA proposes Bayou Two Prairie for addition to the list.

The EPA also reviewed information contained in *Water Quality Assessment of Arkansas' Significant Publicly-owned Lakes (1989, 1995, and 1999)* and 305(b) reports (1996, 2002). In the absence of a state methodology, EPA considered chlorophyll *a* data, dissolved oxygen, pH, and total phosphorus data. Waters proposed for addition to the list in this group show elevated chlorophyll *a*, dissolved oxygen, and pH values, which are strong indicators of nutrient impairment. This is similar to methodology used by the ADEQ in listing Rolling Fork (HUC 11140109-919) as being impaired by phosphorus and nitrates. After a careful review of this information the EPA has concluded that the following waters should be added to the state's 2002 303(d) list.

STREAM NAME	HUC	REACH	PARAMETER	PRIORITY
Osage Creek	11010001	045	Total Phosphorus	H

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Kings River	11010001	037	Total Phosphorus	H
Osage Creek	11110103	903	Total Phosphorus	H
Osage Creek	11110103	030	Total Phosphorus	H
Spring Creek	11110103	931	Total Phosphorus	H
Illinois River	11110103	022	Total Phosphorus	H
Bayou Two Prarie	8020402	006	Total Phosphorus	M
Bear Creek Lake	8020205	lake	nutrients	M
First Old River Lake	11140106	lake	nutrients	M
Grand Lake	8050002	lake	nutrients	M
Horseshoe Lake	8020203	lake	nutrients	M
Mallard Lake	8020204	lake	nutrients	M
Old Town Lake	8020303	lake	nutrients	M

Water Column Data That Are Sufficient to Show That Numeric Water Quality Standards Are Not Being Met.

The State has not demonstrated, to the EPA's satisfaction, good cause for not including waters listed in the table below in its 2002 Section 303(d) list. As provided in 40 CFR 130.7(b)(6)(iv), the EPA requested that the State demonstrate good cause for not including these waters. Arkansas' response to the EPA's request for good cause was in general that the EPA had used the wrong criteria for most of the waters or interpreted the criteria incorrectly from that described in the State's assessment methodology. After working cooperatively with Arkansas to clarify any misuse of criteria or misapplication of the assessment methodology, the EPA was able to resolve many concerns; however, there are still some waters for which the EPA has concerns. Some waters were not listed despite available water column data that are sufficient to show that numeric water quality standards are not being met. Waters included in this group meet the minimum data requirements as established by the ADEQ and the assessment shows that the percent exceedance is greater than that allowed in the ADEQ assessment methodology. The EPA technical staff determined that the percent exceedances, for these parameters, used in the ADEQ assessment methodology is a reasonable approach and is consistent with Arkansas's water quality standards. In some cases the minimum sample size has not been met but, the number of exceedances allowed for a finding of non-support have been reached. Additional data collection to achieve the minimum sample size will not affect the determination of non-support for these waters. The EPA believes that it is appropriate to list waters under this scenario. Based on these determinations the EPA is proposing that the following waters be listed.

STREAM NAME	HUC	REACH	PARAMETER	PRIORITY
Overflow Creek	11010014	006	patho gens	M
Overflow Creek	11010014	004	patho gens	M

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Curia Creek	11010009	901	patho gens	M
Village Cr	11010013	012	patho gens	M
Cache River	8020302	018	patho gens	M
Cache River	8020302	017	patho gens	M
Cache River	8020302	028	patho gens	M
Lake Wilhelmina	11140108	lake	bacteria	M
Lake Calion	8040201	lake	chlorides	M
Lake June	11140203	lake	chlorides	M
Lake Frierson	8020302	lake	turbidity	M

Waters included on the Arkansas 1998 303(d) list but not carried forward to the Arkansas 2002 303(d) list

The EPA compared the listings in the 1998 303(d) list with those in the 2002 303(d) list and found that nine waterbody pollutant pairs were on the 1998 303(d) list but not carried forward to the 2002 303(d) list. As provided in 40 CFR 130.7(b)(6)(iv), the EPA requested that the State demonstrate good cause for not including these waters on the Arkansas 2002 303(d) list. Arkansas responded in an email dated January 31, 2003 justifying waterbody by waterbody the omission of these waterbody pollutant pairs. Upon review of this information, the EPA concludes that the State's decision to omit these waters and pollutants from the 2002 303(d) list is consistent with federal listing requirements except for the Poteau River. Based on this determination the EPA is proposing that the following water be listed.

STREAM NAME	HUC	REACH	POLLUTANT	PRIORITY
Poteau River	11110105	031	nutrients	H

Nonpoint Source Impaired Waters

The State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) and the EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. The EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources. In *Pronsolino v. Marcus*, the District Court for the Northern District of California held that section 303(d) of the Clean Water Act (CWA) authorizes the EPA to identify and establish total maximum daily loads (TMDLs) for waters impaired by nonpoint sources. *Pronsolino et al. v. Marcus et al.*, 91 F.Supp.2d 1337, 1347 (N.D.Ca. 2000). See also EPA's 1991 Guidance and National Clarifying Guidance for 1998

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Section 303(d) Lists, Aug. 27, 1997.

Priority Ranking and Targeting

The EPA also reviewed the State's priority ranking of listed waters for TMDL development, and concludes that the State properly took into account the severity of pollution and the uses to be made of such waters. The State's priority ranking falls into three categories. Those waters with the highest risk of affecting public health or welfare, substantial impact on aquatic life uses, and existing data available for TMDL are given a high priority rank (H). A medium priority rank (M) is assigned to waters with a moderate risk to public health or welfare or to aquatic life uses. A low priority rank (L) is assigned to those waters with the lowest risk to public health or welfare and secondary impact on aquatic life uses.

In addition, the EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this time frame. The State is well underway with several of the TMDLs targeted for waters including 3 TMDLs for Flat Creek, 2 TMDLs for Salt Creek, 2 TMDLs for Stone Dam Creek, and 1 TMDL for Whig Creek. Additionally, the State should be able to complete the monitoring and analysis work required for TMDLs for six reaches of the Strawberry River within the next two years. The State has targeted a mix of TMDLs for near-term TMDL development, including waters affected by point and nonpoint sources and a mix of simple and more complex TMDLs. The EPA concludes, based on these considerations, that the State's priority ranking and targeting commitments are consistent with federal requirements.

Administrative Record Supporting This Action

In support of this decision to approve the State's listing decisions, the EPA carefully reviewed the materials submitted by the State with its 303(d) listing decision. The administrative record supporting the EPA's decision is comprised of the materials submitted by the State, copies of Section 303(d), associated federal regulations, and the EPA guidance concerning preparation of Section 303(d) lists, and this decision letter and supporting report. The EPA determined that the materials provided by the State with its submittal provided sufficient documentation to support our analysis and findings that the State listing decisions meet the requirements of the Clean Water Act and associated federal regulations. We are aware that the State compiled and considered additional materials (e.g., raw data and water quality analysis reports) as part of its list development process that were not included in the materials submitted to the EPA. The EPA did not consider these additional materials as part of its review of the listing submission. It was unnecessary for the EPA to consider all of the materials considered by the State in order to determine that, based on the materials submitted to the EPA by the State, the State complied with the applicable federal listing requirements. Moreover, federal regulations do not require the State to submit all data and information considered as part of the listing submission.

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

References

The following list of documents was used directly or indirectly as a basis for the EPA's review of the State's 303(d) water body list. This list is not meant to be an exhaustive list of all records reviewed, but to provide the primary documents the Region relied upon in making its decisions to approve the State's list.

Letters and E-Mail

EPA letter to Arkansas approving 1998 list, with enclosure, July 30, 1998

Arkansas' 2002 List Submittal with attachments, September 5, 2002

Letter from EPA to ADEQ, December 17, 2002

Letter from ADEQ to EPA, January 16, 2003

E-mail correspondence between the EPA and Arkansas

Regulations

40 CFR Part 130 Water Quality Planning and Management

Arkansas Water Quality Standards, Arkansas Pollution Control and Ecology Commission, Regulation 2, April 1998.

December 28, 1978 Federal Register Notice, Total Maximum Daily Loads Under Clean Water Act, finalizing EPA's identification of pollutants suitable for TMDL calculations, 43 Fed. Reg. 60662.

January 11, 1985 Federal Register Notice, 40 CFR Parts 35 and 130, Water Quality Planning and Management: Final Rule, 50 Fed. Reg. 1774

July 24, 1992 Federal Register Notice, *40 CFR Parts 122, 123, 130*, revision of regulation, 57 Fed. Reg. 33040

Guidance

Guidance from Office of Water, Headquarters, US EPA regarding Consolidated Assessment and Listing Methodology (July 20002)

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Memorandum from Robert H. Wayland III, regarding Clarification of the Use of Biological Data and Information in the 2002 Integrated Water Quality Monitoring and Assessment Report Guidance (March 26, 2002)

Memorandum from Robert H. Wayland III, EPA Office of Water regarding 2002 Integrated Water Quality Monitoring and Assessment Report Guidance (November 19, 2001).

Memorandum from Robert H. Wayland, III, Director, Office of Wetlands, Oceans and Watersheds, to Water division Directors, Region I-Xre: Implementation of Section 303(d) Until the New TMDL Rule Becomes Effective (Dec. 7, 2000)

Guidance: Use of Fish and Shellfish Advisories and Classifications in 303(d) and 305(b) listing Decisions - Geoffrey H. Grubbs and Robert H. Wayland, III (October 24, 2000).

EPA Review of 2000 Section 303(d) Lists - Robert H. Wayland, III (April 28, 2000)

Fact Sheet - EPA Revises Water Quality Listing Requirements for April 2000.

Guidance from Office of Water, Headquarters, US EPA regarding Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, EPA-841-B-97-002B (September 1997)

Memorandum from Robert H. Wayland III, Director, Office Wetlands, Oceans, and Watershed, Office of Water, EPA Headquarters, to Water Division Directors, Regions I - X, and Directors, Great Water Body Programs, and Water Quality Branch chiefs, Regions I - X, regarding National Clarifying Guidance For 1998 State and Territory Section 303(d) Listing Decisions (August 17, 1997).

Memorandum from Robert Perciasepe, Assistant Administrator to Regional Administrators & Regional Water Division Directors regarding new Policies for Establishing and Implementing Total maximum Daily Loads (August 8, 1997).

Memorandum from Geoffrey H. Grubbs, Director, Assessment and Watershed protection Division to FACA Workgroup on Section 303(d) listing Criteria regarding nonpoint Sources and Section 303(d) Listing Requirements (May 23, 1997).

Memorandum from Robert Perciasepe, Assistant Administrator regarding EPA Action on 1996 lists, priority Rankings and TMDL Targeting Plans Submitted by States Under Section 303(d) of the CWA (August 9, 1996).

Memorandum from Robert perciasepe, Assistant Administrator regarding Total Maximum Daily

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Loads: A Key to Improving Water Quality (February 26, 2006).

Memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA Headquarters, to Water Quality Branch Chiefs, Regions I - X, and TMDL Coordinators, Regions I - X, regarding Guidance for 1994 Section 303(d) Lists (November 26, 1993).

Memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA Headquarters, to Water Quality Branch Chiefs, Regions I - X, regarding Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation (October 30, 1992).

Memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA Headquarters, to EPA Water Quality Branch Chiefs, Regions I - X and TMDL Coordinators, Regions I - X, regarding Supplemental Guidance on Section 303(d) Implementation (August 13, 1992).

Regulations: Part 130 of Title 40 of the Code of Federal Regulations, section 130.7, contains the regulations currently governing the Total Maximum Daily Load program, which was issued July 24, 1992.

Guidance for Water Quality-Based Decisions: The TMDL Process, EPA 440/4-91-001 (April 1991).

Data Sources

ADEQ Ambient Monitoring Database downloaded from ADEQ's website for 1994 through 2001

STORET data for 1994 through 2001.

USGS data for 1994-2001

Beach Closure Data from the 5 Regions of the Arkansas Department of Health from 1999-2002.

Arkansas Permit Enforcement Reports from 1998 - 2002.

Arkansas Reports Published by ADEQ

ADEQ Water Division, 1996. Report on Water Quality, Gifford, Arkansas and Surrounding Area. ADEQ Report WQ96-08-1, 23p.

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Posey, W.R., J. L. Harris and G. L. Harp, 1996. An Evaluation of the Mussel community in the Lower Ouachita River. ADEQ Water Division Report WQ96-08-2, 26p.

Kresse, T.M. and E.J. Van Schaik, 1996. An Evaluation of the Mussel community in the Lower Ouachita River. ADEQ Water Division Report WQ96-11-1, 17p.

ADEQ Water Division, 1996. Ammonia Investigation, Ouachita River. ADEQ Report WQ96-??-?, 17p.

ADEQ Water Division, 1997. Illinois River Water Quality, Macroinvertebrate and Fish Community Survey, Benton and Washington Counties, Arkansas. ADEQ Report WQ97-03-1, 90p.

ADEQ Water Division, 1997. TMDL Investigation of Water Quality Impairments to Stone Dam Creek, Faulkner County, Arkansas. ADEQ Report WQ97-05-1, 24p.

ADEQ Water Division, 1997. TMDL Investigation of Water Quality Impairments to Town Branch, McKisic, and Little Sugar Creeks, Benton County, Arkansas. ADEQ Report WQ97-05-2, 31p.

ADEQ Water Division, 1997. TMDL Investigation of Water Quality Impairments to Whig Creek, Pope County, Arkansas. ADEQ Report WQ97-06-1, 24p.

ADEQ Water Division, 1997. TMDL Investigation of Water Quality Impairments to Jug Creek, Dallas County, Arkansas. ADEQ Report WQ97-06-2, 24p.

ADEQ Water Division, 1998. TMDL Investigation of Water Quality Impairments to Unnamed Tributary to Flat Creek, Union County, Arkansas. ADEQ Report WQ98-04-1, 42p.

ADEQ Water Division, 1998. TMDL Investigation of Water Quality Impairments to Big Creek Ditch and Lost Creek Ditch, Craighead County, Arkansas. ADEQ Report WQ98-10-1, 25p.

ADEQ Water Division, 1998. Water Quality Study of Brushy Lake, Monroe County, Arkansas. ADEQ Report WQ98-11-1, 9p.

ADEQ Water Division, 1998. Water Quality Study of Lake Conway, Faulner County, Arkansas. ADEQ Report WQ98-11-2, 6p.

ADEQ Water Division, 1999. TMDL Investigation of Water Quality Impairments to Rolling Fork River, Polk County, Arkansas. ADEQ Report WQ99-04-1, 25p.

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

ADEQ Water Division, 1999. Physical, Chemical and Biological Assessment of the Piney Creek Watershed, Johnson, Newton and Pope Counties, Arkansas. ADEQ Report WQ99-07-1, 72p.

ADEQ Water Division, 2000. TMDL Investigation of of the Tyson Foods and Nashville WWTP Effluents on Mine Creek, Howard County, Arkansas. ADEQ Report WQ00-05-1, 34p.

ADEQ Water Division, 2000. Water Quality Assessment of Arkansas' Significant Publicly-Owned lakes, Summer 1999. ADEQ Report WQ00-06-1, 27p. + Appendices

ADEQ Water Division, 2001. Physical, Chemical and Biological Assessment of the Bayou Bartholomew Watershed, Jefferson, Lincoln, Drew, Cleveland, Desha and Ashley Counties, Arkansas. ADEQ Report WQ99-07-1, 108p. + Appendices

ADEQ Water Division, 2001. Data Summary of Special Water Quality Sampling on Lake Conway, Arkansas. ADEQ Report WQ01-04-2, 14p.

ADEQ Water Division, 2001. Data Summary of Special Water Quality Sampling on Lake Conway, Arkansas. ADEQ Report WQ01-09-1.

ADEQ Water Division, 2002. Data Analysis of Dissolved Oxygen Sampling in the Arkansas River, Ft. Smith to Dardanelle, Arkansas. ADEQ Report WQ02-02-1, 19p.

ADEQ Water Division, 1996, 1998, 2000 & 2002 Arkansas Water Quality Inventory Reports. prepared pursuant to section 305(b) of the Federal Water Pollution Control.

ADPC&E, June 1987. Physical, Chemical and Biological Characteristics of Least-Disturbed Reference Streams in Arkansas' Ecoregions, Volume I - Data Compilation, 685 pp.

USGS Publications

Adamski, James C., James C. Petersen, David A. Freiwald, and Jerri V. Davis, 1995. Environmental and Hydrologic Setting of the Ozark Plateaus Study Unit, Arkansas, Kansas, Missouri, and Oklahoma, U.S. Geological Survey Water-Resources Investigations Report 94-4002

Barks, C. Shane, 1995. Verification and adjustment of regional regression models for urban storm-runoff quality using data collected in Little Rock, Arkansas, U.S. Geological Survey Water-Resources Investigations Report 94-4216

Bell, R.W. and others. 1997. Water-quality assessment of the Ozark Plateaus study unit,

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

- Arkansas, Kansas, Missouri, and Oklahoma--Organic compounds in surface water, bed sediment, and biological tissue, 1992-95, U.S. Geological Survey Water-Resources Investigations Report 97-4031.
- Bell, Richard W., Robert L. Joseph, and David A. Freiwald, 1996. Water-Quality Assessment of the Ozark Plateaus Study Unit, Arkansas, Kansas, Missouri, and Oklahoma - Summary of information on Pesticides, 1970-90, U.S. Geological Survey Water-Resources Investigations Report 96-4003.
- Davis, J.V. and R.W. Bell. 1998. Water-quality assessment of the Ozark Plateaus study unit, Arkansas, Kansas, Missouri, and Oklahoma---Nutrients, bacteria, organic carbon, and suspended sediment in surface water, 1993-95, U.S. Geological Survey Water-Resources Investigations Report 98-4164.
- Davis, J. V., James C. Petersen, James C. Adamski, and David A. Freiwald, 1995. Water-quality assessment of the Ozark Plateaus study unit, Arkansas, Kansas, Missouri, Oklahoma--Analysis of information on nutrients, suspended sediment, and suspended solids, 1970-92, U.S. Geological Survey Water-Resources Investigations Report 95-4042
- Femmer, S.R. and R.L. Joseph, 1994. National Water-Quality Assessment Program - Ozark Plateaus surface-water quality study, U.S. Geological Survey Water-Resources Investigations Report 94- 15
- Green, W. Reed, 1998. Water-quality Assessment of the Frank Lyon, Jr., Nursery Pond Releases into Lake Maumelle, Arkansas, 1991-1996, U.S. Geological Survey Water-Resources Investigations Report 98-4194.
- Green, W.R., 1996. Eutrophication trends inferred from hypolimnetic dissolved-oxygen dynamics within selected White River reservoirs, northern Arkansas - southern Missouri, 1974-94, U.S. Geological Survey Water-Resources Investigations Report 96-4096.
- Green, W. Reed, 1994. Water Quality Assessment of Maumelle and Winona Reservoir Systems, Central Arkansas, May 1989 - October 1992, U.S. Geological Survey Water-Resources Investigations Report 94- 4218.
- Joseph, Robert L. and W. Reed Green, 1994. Water-quality Conditions and Streamflow Gain and Loss of the South Prong of Spavinaw Creek Basin, Benton County, Arkansas, U.S. Geological Survey Water-Resources Investigations Report 94- 706
- Ludwig, A.H. and G. D. Tasker, 1993. Regionalization of low-flow characteristics of Arkansas streams. U.S. Geological Survey Water-Resources Investigations Report 93-4013

DECISION DOCUMENT FOR THE APPROVAL OF ARKANSAS' 2002 §303(d) LIST

Petersen, James C., Brian E. Haggard, and W. Reed Green, 2002. Hydrologic Characteristics of Bear Creek near Silver Hill and Buffalo River near St. Joe, Arkansas, 1999-200, U.S. Geological Survey Water-Resources Investigations Report 02-4024.

Petersen, J.C., 1998. Water-quality assessment of the Ozark Plateaus study unit, Arkansas, Kansas, Missouri, and Oklahoma---Fish communities in streams and their relations to selected environmental factors, U.S. Geological Survey Water-Resources Investigations Report 98-4155.

Arkansas Water Resources Center Publications

Nelson, M.A., K. L. White and T. S. Soerens, (In Press) Illinois River Phosphorus Sampling Results And Mass Balance Computation, Proceedings of the Arkansas Water Resources Center Annual Conference, 2002.

Nelson, Marc A. and Thomas S. Soerens, September 2002. Illinois River 1999 Pollutant Loads at Arkansas highway 59 Bridge, Arkansas Water Resources Center Publication MSC-279.

Nelson, M. A., W. L. Cash and K. F. Steele, March 2001. Determination of Nutrient Loads in Upper Moores Creek, Arkansas Water Resources Center Publication MSC-290.

Soerens, Thomas S. and Marc A. Nelson, March 2001. Determination of the Pollutant Loads in the Kings River Near Berryville, Arkansas Water Resources Center Publication MSC-291.

Other References

Hopson, R. B. May 1997. A Water Quality Evaluation of DeQueen Lake, Dierks Lake, Gillham Lake, and Millwood Lake. Masters Thesis, University of Arkansas. Pp 503.